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EXAMINER

WOODS, ERIC V

ART UNIT

PAPER NUMBER

2672

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,332

Applicant(s)

FRANCHI ET AL.

Examiner

Eric V Woods

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Specification***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text, and begin at the top of the page, not the middle.

Drawings

Examiner accepts the drawings submitted by applicant with the instant application.

Priority

Examiner acknowledges the priority claim to provisional application 60/416,494 and notes that such was timely filed.

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, upon close inspection by examiner the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 3, 7, 9, 11-12, 14, 18-19, 21, 23-33, 37, 41-43, 46-48, and 51 of this application. The provisional application lacks any mention of color, page or graphic description languages, or several others of the dependent claim limitations. Applicant is reminded

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that the provisional application as filed lacks detail. Only three drawings and six pages of specification were filed with no claims in the provisional application, versus 53 claims, 38 pages of specification, and six figures with many elements in each. Therefore, examiner respectfully advises applicant that for most elements – excluding the independent claims – domestic priority claims will be denied and references having the US filing date may properly be applied to said claims.

Applicant is put on notice that as of the next Office Action, this denial of priority will be made **FINAL**. Applicant is reminded that this is not an appealable matter (see 37 CFR 1.181-1.182, and MPEP 2101); if applicant disagrees with examiner's determination, applicant's only recourse is to file a petition under 37 CFR 1.181 contesting this matter. Applicant is reminded that such petition must be filed before issuance of a Final Office Action (MPEP 2101).

Claim Objections

Claim 47 is objected to because of the following informalities: on line 2, claim 47 reads "graphic data an object" where clearly applicant intends it to read either "graphic data **of** an object" or "graphical data **for** an object" or similar language. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claim 52 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure that is not enabling. The computer program, which is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Specifically, applicant needs to correct this deficiency because the claim, as written, is probably not statutory and further is certainly not enabling because there is no storage mechanism for the computer program that would contain such instructions, which is required (see for example MPEP 2106).

In order to overcome this rejection and render the claim statutory, applicant needs to amend the preamble to read as follows (or similar language): "A computer program product tangibly embodied on a computer readable medium for highlighting a selected object on a display, the program causing the data processing system to execute instructions for performing the following steps: " (Examiner has tried to use the same language used by applicant in claim 52 of the instant application.)

Claims 17-19 are rejected under 35 U.S.C. 112, first paragraph, as not having support in the specification, in that applicant never uses the term 'simplifying' in the disclosure and does not describe these procedures.

Claim 50 is rejected under 35 U.S.C. 112, first paragraph, as not being enabled, as the specification does not set forth the idea of rotating the plural rasters clearly in any location that examiner can find.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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Various claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, as set forth below.

In claim 17, the term "simplifying" has no art-accepted meaning and the specification does not provide one of ordinary skill in the art with sufficient meaning to determine the metes and bounds of the recited claim.

Claims 18 and 19 are rejected for not correcting the deficiencies of their parent claim.

Claim 21 is rejected for not making sense, e.g. the claim appears to be a combination of limitations from other dependent claims, and the way it is written, "...comprises highlighting values corresponding to the graphic object..." does not make sense. Examiner believes that applicant intended to write the claim to read similarly to claim 2 and suggests amending the claim to read, "...comprises **assigning** highlight values ..."

Claims 27 is rejected because it is redundant and repeats the latter half of claim 21, and furthermore it recites that altering the pixels is performed by altering the pixels.

****Please note that all rejections under 35 U.S.C. 103(a) as below are made according to examiner's best interpretation of claims in light of the defective wording as cited above.**

Claims 46-48 are rejected as indefinite under Ex parte Copenhaver, 109 USPQ 118 (Bd. App. 1955). The use of the word 'type' renders the claims indefinite, and the dependent claims are rejected as not correcting the deficiency of their parent claim.

Claim Objections

Claim 1 is objected to because of the following informalities: the method is obviously computer-implemented, but this is not claimed. Appropriate correction is required, which applicant can affect by amending the preamble of claim 1 to begin as follows: "A computer-implemented method for ..."

Definitions

Applicant's specification defines a "blank attribute" to be "an attribute or characteristic of a graphic object which, when rendered, causes the pixels associated with the object to have non-highlighting values." (See for example paragraph [0081] in the pre-grant publication of the instant application).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 21, 52, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoe et al (US 6,337,700 B1) in view of Priem et al (US 4,958,146).

Firstly, examiner would like to point out that raster layers in graphics are well known in the art and have been for many years; for example, Priem et al (US 4,958,146), assigned to Sun Microsystems, which teaches the use of 8 raster graphics layers or planes – see Fig. 3 for an example of this. It is further well known that such objects can be composited in selective combinations – see for example Priem Abstract and 1:5-2:15 (Boolean operations upon layers for compositing purposes, and foreground/background operations). Such information is herein proven to be within the scope and knowledge of the prior art and thusly would be prima facie known to one of ordinary skill in the art (therefore meeting the standards of *Graham v. Deere* inquiry).

Also, see McCormack et al (US 6,633,297 B2), where in the Abstract and 1:5-2:25, the reference teaches that all objects are rasterized before they are put into a graphics pipeline and turned into fragments. Kang et al (US 6,266,068 B1) clearly teaches the existence of multiple graphics planes in Figs. 2 and 3A-3E, and in 2:30-65, where as stated above, one of those layers could be the base graphics raster. Kang clearly teaches that users can select objects; see for example the intra-layer selector 106 in Fig. 1 as taught in 4:19-35. Kang teaches in 11:37-63 that a user can highlight a layer using the input device to select the layer in question, with each layer having a different depth.

Secondly, claim 1 is a method, claim 53 is an apparatus implementing the method, and claim 52 appears to be a claim directed to a computer program

implementing the method. Therefore, the rejections valid on claim 1 are valid on these two claims without further comment.

Finally, applicant uses the term “raster” as a noun, wherein the “base graphic raster” is synonymous with terms such as “plane” and “layer” in the art, e.g. the claim could just as easily recite “base graphic plane” or “base graphic layer”, etc.

****Note for all dependent claims below, the entirety of the rejection to their parent claims is incorporated by reference, including motivation and combination****

As to claims 1, 52, and 53,

A method for highlighting a selected object on a display, the method comprising:

-Rasterizing base graphic data to provide a base graphic raster, the base graphic raster comprising at least one graphic object including a selected graphic object to be highlighted; (As set forth above, Priem teaches multiple raster graphics planes in Figure 3, and clearly one of those could be the base graphics plane or raster recited by applicant.)(Kinoe teaches in 3:15-30 various types of displays, and uses the term ‘translucent’ to mean ‘transparent’ in certain contexts, for example in 9:57-10:30 it is clearly taught that the graphical objects can be in highlighted, translucent, and/or translucent highlighted modes. Obviously, each object could be on its own layer, since it contains depth information, as is well known in the art, and as taught by Kinoe in 9:40-58 (see Kang as cited above for proof of that).)

-Providing selection graphic data including a graphic object corresponding to the selected graphic object; (Kinoe clearly allows the user to select graphic objects – see Abstract, 1:5-2:25, Figs. 13-15, and many other locations, and the user can manipulate

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a menu to locate the specific component – 2:38-55. Clearly, the graphic object could be on its own graphics layer.)

-Rasterizing the selection graphic data to yield a selection graphic raster; and (Clearly, the graphic object could be on its own graphics layer (as is well known in the art, see for example Kang), and that layer would prima facie correlate to a raster layer of Priem (and all objects are rasterized during rendering anyway as is well known in the art, see McCormack for example).)

-Compositing the base graphic raster and the selection graphic raster to yield an output graphic raster for display. (Priem clearly teaches the combination of the raster layers as set forth above (1:5-25) specifically, and obviously the graphical objects of Kinoe have to be combined after highlighting before they are drawn on the screen (16:25-17:55 and Figures 14 and 15 for example)).

As stated before, Kinoe is a system directed to allowing the user to locate, select, and highlight various portions of a three-dimensional design using a conventional two-dimensional display device. Clearly, these objects are at separate depths in the memory of the computer, and the system highlights the selection of the user. The system of Priem teaches multiple raster graphics layers, and it is well known in the art that objects can have their own layers and that obviously there can be a near-infinite number (at least more than the eight of Priem, as enabled by greater increased computing capabilities since that invention).

Clearly, the graphic object could be in its own layer and this would be composited or combined with the base graphic layer(s). Further, obviously Priem uses hardware to

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perform the combining operations, so clearly the output of a combination of raster layers will be a raster layer as well, thusly meeting the limitations of output graphics raster layer. As established above, the other limitations are well known and obvious in the art, and it would be obvious that multiple graphics objects at the same depth could be on the same layer if so desired.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions of Kinoe and Priem for the above stated reasons. Further, it is well known in the art that all display and output devices (e.g. monitors, printers, and the like) utilize raster format graphics, which means that it would be prima facie easier for a system to perform all the calculations in hardware, and further combining and compositing raster graphics in hardware is a simple and non-complicated operation compared to using vector graphics, which require compositing in software first and then conversion to raster format for final output. The Kinoe reference is silent as to whether the graphical objects or layers are raster or vector, but for at least the above reasons, and the fact that Kinoe teaches that other methods of manipulating three-dimensional CAD models are slow (see 1:48-2:30) because they are computationally intensive (and vector graphics are very computationally intensive), and raster graphics are known to be both fast and the native format for display devices the combination would have been obvious.

As to claim 21, this limitation is a combination of the limitations from various dependent claims addressed above. However, examiner will address them in turn. Firstly, Kinoe assigns highlighting values to graphical objects (see for example Fig. 4, the highlighting

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attribute 217 in graphical object state table 109), where a graphic object is prima facie composed of pixels, where clearly as set forth by Priem the selected object could be on its own raster graphics plane as set forth in the rejection to claim 1 as previously discussed.

Kinoe clearly teaches as in Fig. 12 that there is a base reference plane that would be comparable in some ways to the base raster recited in the instant claim, and that there is a graphical object state table that is updated in 565. Clearly, if the object state is updated upon a screen operation, it would be obvious in view of the previously applied references that the changes made in the copy of the object could simply be made to the reference plane or base graphics raster by updating the graphical object state table for the reference plane, and it would be obvious to do so. It would be obvious to perform this limitation in this manner for the reasons set forth below.

Graphical objects are prima facie made of pixels and very clearly those pixels would be altered when the object is.

The explanation for this comes from the database and computer science arts. In databases, it is well known that multiple users can be attempting to access an object concurrently. A classical problem emerges when multiple users are trying to change the state of an object simultaneously; two classic solutions are used to this problem. One is to have a mutex (mutual exclusion) lock on the object such that other threads (users) cannot write or access to that piece of code while it is in use by another process (in most implementations, read access is preserved, though this is not necessarily the case or required). The other is to create a copy of the object and then alter and perform

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changes on the copy. Afterwards, the copy is uploaded back to the database and in some way either substituted for the original or the changes are transferred to the original, so that the state is updated in a consistent manner, so that all users reading the object will get the most current version (see for example JP 10-055426A to Hoshi, as relevant to graphic data).

In a nutshell, the system of Kinoe teaches a three-dimensional system for interacting with a CAD system, where multiple users might be accessing the system from multiple workstations, and thusly making changes locally to a copy of the object and doing the highlighting in that manner would make sense so that any changes or selections performed by other users would not interfere or be visible to the current user. Further, doing this would require the least amount of data processing on the host system, since the entire object in the parts database would not be altered; only the changes (e.g. the highlighting attribute for selected portions of the object) would be uploaded or made to the object.

As to claim 22,

A method according to claim 21 wherein altering values of pixels from the base graphic raster comprises replacing the values of pixels from the base graphic raster with the highlighting values of corresponding pixels in the selection graphic raster.

As stated above in the rejection to claim 21, the idea from the database art is that when the user makes changes to an object, other users are locked from accessing the object while the changes are recorded, so that everyone that accesses it thereafter will get the fresh or most current copy of the object in question. Therefore, the idea of

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replacing the pixels in the object is well known in the art, in the sense that it would be obvious that when a user accesses an object in a database with write access, they will obtain a copy of the object in the database to alter, and when the alterations are complete, the object in the database will be replaced with the more current version.

Therefore, the idea of a separate graphics raster containing only the objects in question is well known in the art for the reasons that the system would be able to alter it much faster than having to separate the objects from the base graphics raster and then operate upon them, and more importantly that the system can continue to operate upon the base graphics raster to make other changes and not be held up in processing whilst the user (or other thread or process) is making changes in the specific graphics objects, in the form of highlighting them.

As to claim 23,

A method according to claim 21 wherein altering values of pixels from the base graphic raster comprises, for each pixel to be altered, computing a function to modify the value of the pixel to be altered, the function based on at least one of: the value of the pixel to be altered and the highlighting value of the corresponding pixel in the selection graphic raster.

Reference Kinoe teaches that each graphical object is defined by a function (see Fig. 3, object definition data 203). Reference Priem teaches that the raster planes are combined using Boolean operations – see Priem 1:5-21 and the abstract for example. The concept of a “function” clearly includes Boolean functions, and obviously the selection graphic and the base graphic would be on different raster layers (objects

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having their own layer, as discussed in the rejection to claim 1). Obviously, a Boolean operation could perform the process of altering pixels from the base graphic raster (e.g. AND), wherein the pixels that were not common to the two graphics layers would be replaced by pixels that were in the selection graphics layer or some similar operation. The rejection to claim 1 is incorporated by reference.

As to claim 24, a method according to claim 23 wherein the function comprises color inversion of the value of the pixel to be altered.

Kinoe does not expressly teach this limitation, but Priem further teaches that objects have foreground and background colors (see abstract) and that drawing planes can be drawn or painted in an inverted (e.g. color-inverted) mode using a Boolean operation (see for example Table 1, 3:35-50), as separate from the 'draw reversed' command), which clearly meets the limitations of this claim.

As to claim 27, the recited limitation is the same as the latter half of claim 21, wherein claim 21 merely states that compositing the two graphics raster comprises performing the altering, and this claim is redundant because it merely recites that altering the pixels comprising altering the pixels. The rejection to claim 21 is herein incorporated by reference, and the relevant portions of the rejection to claim 5 that concerns the references combined in the rejection to the parent of the instant claim.

As to claim 28, obviously a raster layer of Priem could be a pattern and it could obviously use Boolean operations to combine it with another raster layer in a pattern as specified in the claim.

As to claim 31,

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A method according to claim 23 wherein altering values of pixels from the base graphic raster comprises altering values of all of the pixels in the base graphic raster which correspond to pixels of the selection graphic raster having highlighting values

It would be obvious that all graphical objects are composed of pixels, and that there can be multiple objects highlighted simultaneously (see Kinoe Fig. 15). Therefore, it would be obvious to alter all the pixels that were highlighted in the selection graphics layer. This is prima facie obvious – applicant has provided no reason why all the objects that are highlighted in the selection graphics layer should **not** be so altered in the base graphics layer. Furthermore, simply put, the simplest implementation of applicant's invention would obviously be where the pixels of all the objects in the selection layer were copied.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe in view of Priem as applied to claim 1 above, and further in view of Mukherjee et al (US 6,664,971 B1).

As to claim 2,

A method according to claim 1 wherein providing the selection graphic data comprises copying the selected graphic object from the base graphic data.

References Kinoe and Priem do not expressly teach this limitation. Mukherjee teaches in 5:40-50 that a copy of the graphical object in a memory is drawn to frame buffer and is rasterized during that process. Therefore, the reference teaches creating a copy of the graphical object. Clearly, such an object could be one of the graphical objects of Kinoe as set forth in the rejection to claim 1. Further, it would be obvious that

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such a copy would indeed be a copy of the selected graphic object from the base layer as set forth in the claim. Motivation for combination of Kinoe and Priem with Mukherjee comes from the fact that Mukherjee teaches (1:15-2:40) that his system provides significant improvements in anti-aliasing and allows easy anisotropic filtering, both of which were well known to one of ordinary skill in the art at the time the invention was made to be beneficial.

As to claim 3,

A method according to claim 2 wherein providing the selection graphic data comprises assigning a highlighting attribute to the copied selected graphic object.

Kinoe clearly teaches this limitation in 2:52-60 and 3:1-28, where it is taught that objects are structured in a hierarchy on the display, and that such objects can have various attributes and uses the term 'translucent' to mean 'transparent' in certain contexts, for example in 9:57-10:30 it is clearly taught that the graphical objects can be in highlighted, translucent, and/or translucent highlighted modes. Clearly, this means that each object has an attribute to indicate whether or not it is highlighted. Further, it would be obvious in view of Mukherjee that such a change would in fact be applied to the copy.

As to claim 32, a method according to claim 1 wherein providing the selection graphic data comprises replicating the base graphic data and modifying non-selected objects in the replicated base graphic data to have blank attributes.

This limitation is very similar to that of claim 2, wherein in the rejection to claim 2 only the graphical object was copied.

As to claim 39, this limitation is clearly taught by Priem, where in 3:57-4:2 he teaches that his system renders video data, and clearly if the system of Kinoe uses raster layers for video objects as set forth in the rejection to claim 1, the rasterizing would prima facie be done by the rendering engine of Priem. It is obvious that any video card that takes graphics layers and composites them is performing rendering. This goes back to the definition of the term 'rendering'. Examiner asserts that Priem contains a rendering engine, and that it would perform rasterization of both the base and selected graphics rasters.

As to claim 44, it would be obvious that if Kinoe can turn on highlighting by changing the highlighting attribute in the state table of Fig. 4, that clearly Kinoe could turn off highlighting in the same manner. Obviously, the change would be made to the layer that the object was on, and then those raster layers would be composited to form the output image as recited in the claim. Motivation and combination is taken from the rejection to claim 1.

Claims 4-16 are rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe in view of Priem and Mukherjee as applied to claim 3 above, and further in view of Kang.

****The term non-transparent is being interpreted by examiner to mean any object that has zero percent transparency. ****

As to claim 4,

A method according to claim 3 wherein rasterizing the selection graphic data to yield the selection graphic raster comprises assigning highlighting values only to pixels in the

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selection graphic raster corresponding to portions of the selected graphic object that are not overlapped by other non-transparent graphic objects.

References Kinoe, Priem, and Mukherjee do not expressly teach this limitation. However, it is well known in the art that three-dimensional graphics rendering systems such as Kinoe (15:47-60) do not display parts that are hidden from view or the portions that overlap thereof. This process occurs for several reasons. Firstly, the three dimensional model in memory is considered with respect to the viewport created by the display device and the rest of the model is discarded (clipping) so that only the portions that are visible are rendered. After this step but before rendering, a process called hidden surface removal is typically performed so that surfaces having a depth that is greater than that of the objects in front of them are eliminated so that they are not drawn and that amount of processing time is saved. Further, as stated before, it is well known in the art of graphical highlighting that only the selected, visible portions would be highlighted – see for example US 5,696,533 (6:5-35) to Montgomery et al, with the cited column: line references proving this.

Kang et al (US 6,266,068 B1) clearly teaches the existence of multiple graphics planes in Figs. 2 and 3A-3E, and in 2:30-65, where as stated above, one of those layers could be the base graphics raster. Kang clearly teaches that users can select objects; see for example the intra-layer selector 106 in Fig. 1 as taught in 4:19-35. Kang teaches in 11:37-63 that a user can highlight a layer using the input device to select the layer in question, with each layer having a different depth (e.g. see for example Figs.

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3A-3E with emphasis on Figs. 3C and 3D with the shaded ellipse having different depths in each, see for example 8:22-46).

Kang further teaches that his system can deal with complex occlusion scenarios (1:38-61), and this is noted in 4:20-35, where layers that occlude or are blended are disclosed, and in 7:10-30 the use of a painter's algorithm is disclosed, where this algorithm is well known in the art to ensure that objects in the scene occlude each other correctly based on depth, except where such objects are blended because they are partially transparent as set forth in 4:20-35 for example.

All that being said, it would be obvious to one of ordinary skill in the art that only the non-occluded portions of such an object would be drawn when a painter's algorithm or similar is used so that the scene is drawn in a realistic manner (excluding pixels that are blended as set forth above). Therefore, since only the portions of the selected graphical object that are not occluded will be drawn, it would be obvious to only highlight the portions that are visible, as the rest of the object will not be drawn anyway.

Motivation to combine the above three references with Kang comes from the fact that it would have been obvious to one of ordinary skill in the art at the time the invention was made that the method of Kang – e.g. only drawing the non-occluded portions of graphical objects – requires less system resources and is therefore inherently faster, more efficient, and requires less powerful hardware to implement than its lack. Also, Mukherjee performs similar three-dimensional hardware methods.

As to claim 5,

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A method according to claim 4 wherein compositing the base graphic raster and the selection graphic raster comprises altering values of pixels from the base graphic raster which correspond to pixels of the selection graphic raster having highlighting values.

Kinoe clearly teaches as in Fig. 12 that there is a base reference plane that would be comparable in some ways to the base raster recited in the instant claim, and that there is a graphical object state table that is updated in 565. Clearly, if the object state is updated upon a screen operation, it would be obvious in view of the previously applied references, particularly Kang, that the changes made in the copy of the object could simply be made to the reference plane or base graphics raster by updating the graphical object state table for the reference plane, and it would be obvious to do so. It would be obvious to perform this limitation in this manner for the reasons set forth below.

Graphical objects are prima facie made of pixels and very clearly those pixels would be altered when the object is.

The explanation for this comes from the database and computer science arts. In databases, it is well known that multiple users can be attempting to access an object concurrently. A classical problem emerges when multiple users are trying to change the state of an object simultaneously; two classic solutions are used to this problem. One is to have a mutex (mutual exclusion) lock on the object such that other threads (users) cannot write or access to that piece of code while it is in use by another process (in most implementations, read access is preserved, though this is not necessarily the case or required). The other is to create a copy of the object and then alter and perform

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changes on the copy. Afterwards, the copy is uploaded back to the database and in some way either substituted for the original or the changes are transferred to the original, so that the state is updated in a consistent manner, so that all users reading the object will get the most current version (see for example JP 10-055426A to Hoshi, as relevant to graphic data).

In a nutshell, the system of Kinoe teaches a three-dimensional system for interacting with a CAD system, where multiple users might be accessing the system from multiple workstations, and thusly making changes locally to a copy of the object and doing the highlighting in that manner would make sense so that any changes or selections performed by other users would not interfere or be visible to the current user. Further, doing this would require the least amount of data processing on the host system, since the entire object in the parts database would not be altered; only the changes (e.g. the highlighting attribute for selected portions of the object) would be uploaded or made to the object.

As to claim 6, a method according to claim 2 wherein providing the selection graphic data comprises copying from the base graphic data non-selected objects that overlaps the selected graphic object.

The three base references do not expressly teach this limitation while Kang does. Firstly, the rejection to claim 4 is incorporated by reference in its entirety. As noted therein, occlusion processing is performed on graphical objects. Now, this occlusion processing of Kang that is well known in the art is performed during the rendering process. However, Mukherjee teaches that such rendering is **after** the copying

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process. Therefore, in order to perform occlusion processing, it would be obvious to one of ordinary skill in the art at the time the invention was made to copy objects that overlap with the selected object in order to perform occlusion processing for the reasons set forth in the rejection to claim 4 above.

As to claim 7, a method according to claim 6 wherein the highlighting attribute comprises a color attribute.

Clearly, Kinoe teaches that graphical objects have attributes, including highlighting and transparency, as established above. As is clearly shown in Fig. 13, no parts are highlighted, versus in Fig. 14 one part is highlighted, and it is very clear that the highlighting involves a change in color of the part from these drawings. Also, changing color to indicate highlighting is well known in the art, is trivially obvious, and is an issue of design choice. Priem further teaches that objects have foreground and background colors (see abstract) and that drawing planes can be drawn or painted in an inverted (e.g. color-inverted) mode using a Boolean operation (see for example Table 1, 3:35-50), as separate from the 'draw reversed' command)

As to claim 8, this claim is a duplicate of claim 3. The same rejection is used; while the dependency may vary, the same combination of references is used, and motivation is taken from claim 3 and claim 6.

As to claim 9,

A method according to claim 8 wherein providing the selection graphic data comprises assigning a blank attribute to the copied non-selected objects.

Kinoe teaches very clearly that the “highlighting attribute” 217 in graphical object state table 109 in Fig. 4 has a state of ‘0’ or ‘1’, that is, an object is either designated as highlighted (‘1’) or not (‘0’) – see 10:5-35. Objects by default are not highlighted (see for example Fig. 13). User selection and/or action result in highlighting attributes being enabled on specific parts (see Figs. 14 and 15 for example). As stated in the rejection to claim 6, which is incorporated by reference, the objects are copied in order to perform occlusion processing. Therefore, it would be obvious that since objects by default are in a non-highlighted state, and that only the object that the user selects is highlighted, that such non-selected objects would have a blank attribute assigned to them. The wording of the claim (‘comprising’ language) certainly does not exclude the above scenario.

As to claim 10,

A method according to claim 9 wherein rasterizing the selection graphic data comprises assigning highlighting values to pixels associated with objects having highlighting attributes and assigning non-highlighting values to pixels associated with objects having blank attributes.

Graphical objects *prima facie* consist of pixels. Therefore, any objects that are assigned highlighting attributes will *prima facie* have their pixel assigned highlighting values, and likewise pixels in objects that have a highlighting attribute of ‘0’ will be assigned non-highlighting (e.g. normal) values (Kinoe 10:5-35). Clearly, the objects are rasterized before they are sent to the display device, and clearly the graphical object properties are taken into account when the object is rasterized, and Kang teaches that

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objects are processed in such a way that rasterizing occurs after altering the various attributes to the desired end state.

As to claim 11, this limitation is a substantial duplicate of claim 5 and that rejection is used herein; the references used are the same.

As to claim 12, a method according to claim 9 wherein the highlighting attribute and the blank attribute each comprise different color attributes.

Kinoe clearly teaches this limitation as set forth in claim 8. Clearly the highlighted attribute is the dark color in Fig. 14 and the blank attribute is the light color, and clearly as taught by Kinoe as set forth in the rejection to claim 9 above, the state of the object when it is highlighted and not highlighted is different. Clearly, the difference in color as shown in Figs. 13 and 14 is sufficient proof that the color attributes are different. Priem further teaches that objects have foreground and background colors (see abstract) and that drawing planes can be drawn or painted in an inverted (e.g. color-inverted) mode using a Boolean operation (see for example Table 1, 3:35-50), as separate from the 'draw reversed' command)

As to claim 13, this claim is a substantial duplicate of claim 4 and the same rejection is used. The only variation is that plural graphical objects are being utilized rather than one graphical object. It would be trivially obvious that if one object were being highlighted, that plural graphics objects could be highlighted (see Kinoe Fig. 14 where one object is highlighted and then in Fig. 15 where more than one object is highlighted). It would be obvious to process them all at the same time, which would

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save processing overhead in that only one pass of a highlighting operation would have to occur.

As to claim 14, this claim is a duplicate of claim 7 and the same rejection is used.

As to claim 15, this claim is a substantial duplicate of claims 3 and 4; those rejections are incorporated by reference. The only differences are that the claim uses "pixels corresponding to the graphical object", where clearly a graphical object is prima facie made of pixels, and the occlusion limitation of claim 4 is not present. Basically, it would be obvious to assign the highlighting attribute to the pixels of the graphical object (again, see Figs. 14 and 15 of Kinoe).

As to claim 16, this claim is a duplicate of claim 5 and the same rejection is used.

As to claim 49, a method according to claim 2 wherein rasterizing the selection graphic data comprises assigning highlighting values to pixels in an area of the selection graphic raster corresponding to the copied selected graphic object and compositing the base graphic raster and the selection graphic raster comprises patterning areas within the output graphic raster corresponding to the area of the selection graphic raster.

The above claim recites the same limitations as covered in the rejections to claims 3 and 4, which are incorporated by reference while not including the occlusion or overlap portions of claim 4. The last limitation, "patterning areas" is being interpreted using the broadest reasonable interpretation, where "patterning" is taken to mean applying some kind of image, texture, color, etc., to a graphical object. In this case, applying an alternate color using one of the raster layers of Priem would comprise

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“patterning areas,” and further it would be obvious that if you could apply a color to highlight an object, you could also apply a pattern (see Tolmer for proof that such is well known in the art). Obviously a raster layer of Priem could be a pattern and it could obviously use Boolean operations to combine it with another raster layer in a pattern as specified in the claim. Motivation and combination is taken from the rejections to claims 3 and 4 above.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe, Priem, and Mukherjee as applied to claim 2 above, and further in view of Iwema et al (US PGPub 2003/0214539 A1).

As to claim 17, a method according to claim 2 comprising simplifying the copied selected graphic object.

References Kinoe, Priem, and Mukherjee do not expressly teach this limitation. Reference Iwema teaches a method of highlighting objects, wherein such objects are simplified, as in paragraph [0053], and the graphics of the objects are simplified, as in the last part of the paragraph, where alternative embodiments of the graphical objects can simply change the object to a predetermined color.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the four references above for the reason that Iwema teaches improved methods for highlighting objects, and further teaches that simplifying graphical objects make it easier for them to be processed, e.g. requires less resources. Further, as specified in Mukherjee, it would be obvious that such changes would be made to the combined graphical object. Priem further teaches that objects have foreground and background colors (see abstract) and that drawing planes can be drawn or painted in an inverted (e.g. color-inverted) mode using a Boolean operation (see for example Table 1, 3:35-50), as separate from the 'draw reversed' command)

As to claim 18, a method according to claim 17 where simplifying the selected graphic object comprises setting a plurality of color attributes of the selected graphic object to specify one color.

Reference Iwema clearly teaches this limitation in [0053], where it is set forth that the object could be made transparent, thusly have a background of red with white stripes (a plurality of color attributes) or other configuration, and that it is then set to a single predetermined color, which clearly meets the limitations of the recited claim, and motivation comes from the parent claim.

As to claim 19, a method according to claim 17 wherein an exposed portion of the selected graphic object has an outline and simplifying the selected graphic object comprises replacing the selected graphic object with a shape bounded by the outline.

Clearly, any object shown on the screen will have an outline (e.g. a graphical object must prima facie have bounds upon it so that it can be properly drawn or

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rendered (see Kinoe for this)). The system of Iwema clearly teaches that objects can be surrounded with a halo around their outline in [0011-0015]. Further, it is taught that the body of the object can be turned into a predetermined background color, which would imply that the object would be replaced by a shape with that the color – or the bottom window shown in Fig. 2 and designated with cross marks through it.

As to claim 20, this claim is a duplicate of claim 19 (the limitations are the same). While the dependency may be different, the limitation is the same and rejected using the same reference, so the rejection to claim 19 is properly reused herein. Priem further teaches that objects have foreground and background colors (see abstract) and that drawing planes can be drawn or painted in an inverted (e.g. color-inverted) mode using a Boolean operation (see for example Table 1, 3:35-50), as separate from the 'draw reversed' command).

Claims 25-26 and 45 are rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe and Priem as applied to claim 24 above, and further in view of Tolmer et al (US PGPub 2004/0085358). As noted above, applicant's provisional application does **not** in **any** way support color or the specific limitations in these claims. Tolmer has a filing date of October 31, 2002, which is before applicant's US filing date of the instant application, and so is appropriate to use and thusly is eligible prior art under 35 U.S.C. 102(a) and (e).

As to claim 25, a method according to claim 23 wherein the function comprises performing one of a plurality of available color modification operations and wherein computing the function to modify the value of the pixel to be altered comprises selecting

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one of the plurality of available color modification operations based on the highlighting value of the corresponding pixel in the selection graphic raster and applying the selected color modification operation to the value of the pixel to be altered.

As stated above, graphical objects are prima facie made of pixels, especially ones contained in raster graphics planes or layers.

Kinoe does not expressly teach this limitation, while Priem teaches a plurality of Boolean operations to be used upon raster drawing planes (see for example Abstract and Table 1 – 3:35-50). Tolmer teaches the use of a highlighting system (see Abstract) similar to that of Iwema above, but further teaches that such highlighting can comprise inverting the color of graphical objects [0065]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tolmer with Priem and Kinoe, because Tolmer teaches methods of highlighting objects that allow the user to configure highlighting and inverting options, e.g. to choose the color values and patterns that such highlighting and/or inversion will take and/or use, which would allow the user to more easily perceive highlighting and/or choose colors and/or patterns that the user(s) find aesthetically pleasing and/or easier to see and/or to use (for instance, if the user were colorblind, the use of colors to differentiate highlighting would not be very useful).

As to claim 26, a method according to claim 25 wherein the plurality of color modification operations comprises one or more of: performing color inversion on the value of the pixel to be altered; increasing the value of the pixel to be altered by a predetermined amount; decreasing the value of the pixel to be altered by a

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predetermined amount; and, setting the value of the pixel to be altered to a predetermined value.

Clearly both Priem and Tolmer are capable of performing color inversion on pixels to be altered. Motivation and combination is taken from the rejection to the parent claim.

As to claim 28, a method according to claim 27 wherein altering values of selected ones of the pixels from the base graphic raster comprises selectively altering values of pixels in accordance with a pattern.

Tolmer clearly teaches in the Abstract that an ink color stroke and its highlights can be in the form of a pattern, which would clearly constitute the limitations of this claim.

The rejection to Claim 25 is incorporated by reference.

As to claim 45, Tolmer clearly teaches that the strokes can vary in time (see [0076-007], and further that points can be defined with respect to time [0030], both of which would directly suggest that varying the highlighting with respect to time would be an obvious variation. Motivation and combination are taken from the rejection to claim 25 which is incorporated by reference; also, by varying the highlighting with time, it would make it more noticeable, and the system would obviously refresh the image so that if highlighting were turned off by the user, that change would be reflected in the on-screen image.

Claims 29 and 40 are rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe in view of Priem as applied to claim 23 above, and further in view of Li (US

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PGPub 2004/0179742 A1, filed 13 March 2003, eligible under 35 U.S.C. 102(e)). As noted above, applicant's provisional application does **not** in **any** way support color or the specific limitations in these claims. Tolmer has a filing date of October 31, 2002, which is before applicant's US filing date of the instant application, and so is appropriate to use and thusly is eligible prior art under 35 U.S.C. 102(a) and (e).

As to claim 29,

A method according to claim 23 wherein compositing the base graphic raster and the selection graphic raster comprises identifying contiguous regions of pixels in the base graphic raster where corresponding pixels in the selection graphic raster have highlighting values.

References Kinoe and Priem do not teach this limitation expressly. Reference Li teaches in claim 1 the use of an algorithm to identify contiguous regions of pixels and put them in one layer and then put the rest of the pixels in another layer, e.g. a method for identifying contiguous regions of pixels in the base graphics as recited in present limitation. This would be effective for the case where there are multiple parts or objects in the base graphics raster that are highlighted and that need to be processed; such a technique would be fast and allow the elements to be easily matched with the objects in the selection graphics raster or layer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the systems of Kinoe and Priem with that of Li for the reason that Priem allows easy extraction of contiguous regions [0022] and in [0039], where it is taught that such methods can segment out

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foreground image regions, which correspond to the foreground colors or images of Priem (1:5-25) for example.

As to claim 40, the rejection to claim 29 is incorporated by reference, as this recites the same limitations as claim 29.

Claims 30 and 41 are rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe, Priem, and Li as applied to claim 29 above, and further in view of Tolmer.

As to claim 30,

A method according to claim 29 wherein altering values of pixels from the base graphic raster comprises altering values of a pattern of selected pixels in the contiguous regions of pixels in the base graphic raster.

Tolmer clearly teaches in the Abstract that an ink color stroke and its highlights can be in the form of a pattern, which would clearly constitute the limitations of this claim. Clearly, when a region is highlight, if it were to assume a pattern, this would be in accordance with the limitations of the instant claim. Further, such highlights would be in the base graphics raster as set forth above. Altering the pixels to perform such limitations is known in the art.

The rejection to Claim 25 is incorporated by reference.

As to claim 41, the rejection to claim 30 is incorporated by reference.

Claim 32 is rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe in view of Priem as applied to claim 1 above, and further in view of Goodwin et al (US 5,818,975).

A method according to claim 1 wherein providing the selection graphic data comprises replicating the base graphic data and modifying non-selected objects in the replicated base graphic data to have blank attributes.

References Kinoe and Priem do not expressly teach this limitation. Reference Goodwin teaches the creation of two separate buffers for processing a digital image having a high dynamic range where the image to be processed is divided into two images, each image having a different range. Each image is processed and then results are recombined. The end result is a system that creates two versions of an image, one containing certain regions having one range, and the other having regions having another range. Obviously, these regions could be on separate raster planes as in Priem. Essentially, the system of Goodwin replicates the screen to perform alterations upon the images therein, and then recombines the separate layers.

Further, the concept of double buffering is well known in the art. In this context, two frame buffers are used, and the images in the frame buffers are swapped so that changes can be made in one buffer and then that buffer will be swapped with the one currently displayed so that changes can be drawn off-screen to avoid flickering, blurring, and lagging displays. The same idea also bears on this situation.

In summary, there are many reasons to replicate the base graphic layer, and two of those reasons and mechanisms have been set forth above.

As for the additional limitation of modifying non-selected objects in the replicated base graphic data to have blank attributes, reference Kinoe teaches, as in Figs.13-15, that by default parts are not highlighted, and that user action can result in a single or

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multiple portions being highlighted (see for example Figs. 13, 14, and 15 respectively). It would be obvious that non-selected regions or objects should not be highlighted, and to set them to be so configured if they were not already, especially in light of the fact that the default state of Kinoe is to have parts be non-highlighted.

Motivation to combine is taken from the fact that Goodwin would allow the system of Kinoe and Priem to handle images that had a higher dynamic range than the monitor displaying them could support, for example in cases with high-dynamic range images from professional-grade digital cameras.

As to claim 33, clearly as set forth in Kinoe, non-selected / highlighted parts are one color and highlighted/selected parts are another. Furthermore, if the highlighting comprised the inversion taught in Priem (for example, Table 1, 3:35-50), then obviously that would constitute a color attribute. Motivation is taken from the rejection to the parent claim.

As to claim 34, the rejection to claim 32 is incorporated by reference. The additional limitation of deleting non-selected objects is taught by Goodwin as in Figures 5 and 6, where regions that were NOT R2 or NOT R1 are deleted from the respective images, and replaced with an average R2 or R1 value. Clearly, the idea of deleting objects that do not meet specified criteria is taught by Goodwin, and it would be obvious that if non-highlighted portions had a different dynamic range, they would be deleted. In addition to this, it would be obvious that since Priem teaches the use of ERASE commands, that it would be obvious that one layer containing foreground objects could extract those alone simply by applying an OR operation to the foreground and

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background raster planes, which would be of great use in techniques such as chroma-keying, which are well known in the art.

As to claim 35, the rejection to claim 32 is incorporated by reference. The additional limitation of modifying selected objects to have highlighting attributes is clearly taught by Kinoe, who teaches setting the highlighting attribute to 1 to enable highlighting as in Fig. 4 and as explained in other rejections previously in the instant Office Action. Kinoe only enables highlighting attributes when the user has selected them. The combination with Goodwin would allow the objects to be modified to have certain average characteristics, as suggested by rendering the undesired portions to have a certain average value of the R2 regions in Figs. 4 and 5 for example. The average characteristics could easily consist of the highlighting color as taught by Kinoe.

As to claim 36, this claim is a duplicate of claim 32, which is incorporated by reference, except the difference is that instead of setting the non-selected objects to have blank properties, they are modified to have non-highlighting attributes. Clearly, as set forth in the rejection to claim 32 above, Kinoe teaches that non-highlighted portions have the highlighted attribute set to zero, which in this case would be comparable to the blank attribute referred to by applicant in claim 32. Further, that would be a trivially obvious variant, since Kinoe only desires the selected objects to be highlighted anyway.

As to claim 37, clearly as shown in Kinoe Figs. 13-15, both the highlighting attribute and the lack thereof are clearly color attributes, and in this case they are the opposite setting of each other. The rejection to claim 32 is incorporated by reference.

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****Applicant is reminded that claims 32-37 can also be rejected in view of Iwema.**

Applicant should carefully consider that reference when amending the claims.

Claim 38 is rejected in view of Kinoe and Priem as applied to claim 1, and further in view of Hawksworth (US PGPub 2004/0119724 A1).

As to claim 38, a method according to claim 1 wherein the selection graphic data and the base graphic data each comprise a file having a file format and the selection graphic data and the base graphic data have the same file format.

References Kinoe and Priem do not expressly teach this limitation. Reference Hawksworth teaches this limitation. Hawksworth teaches in [0016-0018] the use of that invention to extract objects from PostScript files and then apply them as mask data to other objects within the file, which clearly have the same format. It would be obvious to one of ordinary skill in the art the capability to handle vector files – even though those vector files must prima facie be rasterized before they are shown on a monitor – would allow the system of Kinoe and Priem to be applied to application such as digital prepress imaging as set forth in Hawksworth, and it would allow the system of Kinoe – which uses the system employing multiple layers of graphics objects (which are similar to vector file formats) – with Postscript files, which would allow the system to be used for desktop publishing and the like, as taught by Hawksworth.

As to claim 42, the rejection to claim 38 is incorporated by reference. Postscript is known to those of ordinary skill in the art to be a graphic description language, and clearly the rejection to claim 38 teaches that Hawksworth teaches the use of files in that format.

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As to claim 43, Postscript is known in the art to have objects defined in vector format, which prima facie requires tags on objects, and also Hawksworth teaches the use of Tagged Image File Format images, which clearly also uses tags [see 0017-0019]. The rejection to claim 42 is incorporated by reference. Finally, this limitation is well known in the art.

Claim 46 is rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe in view of Priem as set forth in the rejection to claim 1 above, and as noted earlier, these claims also have no domestic priority, and further in view of Spriggs et al (US 6,421,571 B1). As noted above, examiner is attempting to use the best interpretation of 'type' which is also the broadest reasonable interpretation, which is explicitly Office policy, although the claim is indefinite for the reasons set forth above in the rejection of the claims under 35 U.S.C. 112, second paragraph.

As to claim 46,

A method according to claim 1 wherein the base graphic raster includes a plurality of selected graphic objects to be highlighted, the plurality of selected graphic objects including at least graphic objects of first and second types and wherein providing the selection graphic data comprises providing in the selection graphic data an object corresponding to each of the plurality of selected graphic objects and assigning a highlighting attribute to each of the objects, the method comprising assigning different highlighting attributes to objects corresponding to graphic objects of the first and second types.

Firstly, it would prima facie be obvious that there can be graphical objects of different types or classifications within any graphical system – e.g. the graphics objects of Kinoe can be said to be of different types depending on which graphical attributes are selected (e.g. highlighted or not). In any case, Kinoe and Priem do not expressly teach this limitation.

Reference Spriggs is directed to the same problem-solving area, that is the effective communication of information concerning graphical objects using highlighting. Further, in claims 9-11, Spriggs teaches that various graphical objects of different types are shown on the screen in a hierarchical fashion, and further that such objects are known to have different colors assigned to them based on their state, and that the use can highlight them. In light of Spriggs – and design choice rationale, wherein the color of an object has been held to be a matter of design choice and thusly obvious under *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947) and other applicable case – it would have been obvious that a system containing multiple types of objects could obviously highlight them in different colors, where colors are clearly a highlight attribute. In addition to the above reasons, it would have been obvious to one of ordinary skill at the time the invention was made to combine the systems of Kinoe and Priem with Spriggs, as the system of Spriggs would allow the user to highlight different types of graphical objects and ‘drill down’ to get to the desired part or object, and to do so with two or more different types of part present in one scenario, whereas in Kinoe only one type of object can be highlighted per pass and clearly distinguished, since only one color is utilized.

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Claim 47 is rejected under 35 U.S.C. 103(a) as obvious over Kinoe, Priem, and Spriggs as applied to claim 46 above and further in view of Mukherjee et al (US 6,664,971 B1).

As to claim 47,

A method according to claim 46 wherein providing in the selection graphic data an object corresponding to each of the plurality of selected graphic objects comprises copying the plurality of selected graphic objects from the base graphic data.

References Kinoe and Priem do not expressly teach this limitation. Mukherjee teaches in 5:40-50 that a copy of the graphical object in a memory is drawn to frame buffer and is rasterized during that process. Therefore, the reference teaches creating a copy of the graphical object. Clearly, such an object could be one of the graphical objects of Kinoe as set forth in the rejection to claim 1. Further, it would be obvious that such a copy would indeed be a copy of the selected graphic object from the base layer as set forth in the claim. Motivation for combination of Kinoe, Priem, and Spriggs with Mukherjee comes from the fact that Mukherjee teaches (1:15-2:40) that his system provides significant improvements in anti-aliasing and allows easy anisotropic filtering, both of which were well known to one of ordinary skill in the art at the time the invention was made to be beneficial. Motivation and combination is also taken from the rejection to claim 2.

Claim 48 is rejected under 35 U.S.C. 103(a) as unpatentable over Kinoe, Priem, Spriggs, and Mukherjee as applied to claim 47 above, and further in view of Iwema.

As to claim 48, a method according to claim 47 wherein copying the plurality of selected graphic objects comprises simplifying one or more of the plurality of selected graphic objects.

References Kinoe, Priem, Spriggs, and Mukherjee do not expressly teach this limitation. Reference Iwema teaches a method of highlighting objects, wherein such objects are simplified, as in paragraph [0053], and the graphics of the objects are simplified, as in the last part of the paragraph, where alternative embodiments of the graphical objects can simply change the object to a predetermined color.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the four references above for the reason that Iwema teaches improved methods for highlighting objects, and further teaches that simplifying graphical objects make it easier for them to be processed, e.g. requires less resources. Further, as specified in Mukherjee, it would be obvious that such changes would be made to the combined graphical object. Priem further teaches that objects have foreground and background colors (see abstract) and that drawing planes can be drawn or painted in an inverted (e.g. color-inverted) mode using a Boolean operation (see for example Table 1, 3:35-50), as separate from the 'draw reversed' command)

Claim 50 is rejected under 35 U.S.C.103 (a) as obvious over Kinoe, Priem, Mukherjee, and Kang in view of Official Notice.

As to claim 50,

A method according to claim 49 comprising creating a plurality of output graphic rasters, for each of the plurality of output graphic rasters differently patterning the areas within

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the output graphic raster, and displaying the plurality of output graphic rasters in rotation.

The references applied to claim 49 do not expressly teach this limitation. However, it is well known in the art of web design to have animated GIF (BMP, JPEG) images, utilizing the HTML 4.0.1 standard tag `` as an example. Clearly, all the GIFs are within one file, where clearly the system of Priem could contain each image as a separate raster image layer and alternate and/or animate them in the manner set forth in the animated GIF format. Motivation would come from the use of this system for displaying graphics from the web, e.g. showing web page and/or using the system for graphic WYSIWYG layout of webpages and/or graphics overall.

Claim 51 is rejected under 35 U.S.C. 103(a) in view of Kinoe and Priem in view of Iwema, which does not have domestic priority.

A method according to claim 1 wherein the base graphic raster has a higher resolution than the selection graphic raster.

Kinoe and Priem do not expressly teach this limitation while Iwema in [0078] teaches that in some embodiments that highlighting halo may be anti-aliased for improved resolution, which clearly requires that the halo be composited at a different resolution than the monitor (e.g. super-sampling). Motivation and combination is taken from the fact that Iwema teaches a highlighting system that generates a glow / halo around a highlighted object that makes it more noticeable. This effect would clearly be useful in the system of Kinoe and make highlighted parts more visible. For at least the

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reasons above and the system of Iwema clearly teaches that objects can be surrounded with a halo around their outline in [0011-0015]. Further, it is taught that the body of the object can be turned into a predetermined background color, which would imply that the object would be replaced by a shape with that the color – or the bottom window shown in Fig. 2 and designated with cross marks through it. The combination would thusly have been obvious.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V. Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-4:30 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods


JEFFERY BRIES
PRIMARY EXAMINER

June 22, 2005